Gender Inequality in the Labour Market and the Great Recession

Patricia Peinado and Felipe Serrano

1 Gender Equality: A Fundamental Human Right

Gender equality is a fundamental human right. According to the definition given by the United Nations (UN 2018), "Human rights are rights inherent to all human beings, whatever our nationality, place of residence, sex, national or ethnic origin, colour, religion, language, or any other status. We are all equally entitled to our human rights without discrimination", moreover, it continues "These rights are all interrelated, interdependent and indivisible". What is more, the argument is raised that beyond being a fundamental human right, gender equality is "a necessary foundation for a peaceful, prosperous and sustainable world" and consequently, the provision of females "with equal access to

P. Peinado (✉) · F. Serrano
University of the Basque Country, Bilbao, Spain
e-mail: patricia.peinado@ehu.es

F. Serrano
e-mail: felipe.serrano@ehu.es

P. Arestis and M. Sawyer (eds.), *Inequality*, International Papers in Political Economy,
https://doi.org/10.1007/978-3-319-91298-1_6

education, health care, decent work, and representation in political and economic decision-making processes will fuel sustainable economies and benefit societies and humanity at large".

The 10th of December was declared the "Day of Human Rights" as Human Rights were recognised by the UN in the Universal Declaration of Human Rights during its 183rd plenary meeting held in Paris on 10 December 1944. Additionally, during UN's Beijing Platform for Action of the year 1995, the concept of 'Gender Mainstreaming' was adopted. In 1997, it was defined by the UN Economic and Social Council (ECOSOC) as "the process of assessing the implications for women and men of any planned action"; which includes all levels and areas of legislation and policies or programmes. The concept of gender mainstreaming makes "the concerns and experiences of women as well as of men an integral part of the design, implementation, monitoring and evaluation of policies and programmes in all political, economic and societal spheres" being the last aim "to achieve gender equality." However, in the year 2018, far from having eradicated the existence of inequalities between women and men, we still find gender equality as a major challenge included in all the main political agendas and statues of different governments, organisations, associations and institutions in general. The UN have recently included among the 17 goals defined to reach sustainable development, a specific gender equality goal (number five),[1] recognising that "While the world has achieved progress towards gender equality and women's empowerment under the Millennium Development Goals (including equal access to primary education between girls and boys), women and girls continue to suffer discrimination and violence in every part of the world" (ILO 2018).

In the European Union (EU) gender equality is not only "a fundamental right" and "a common value", but also a strategic objective considered "a necessary condition" paramount to achieve "the objectives of growth, employment and social cohesion" (EIGE 2018). Empirical

[1]The United Nations (UN) specifically defines, "Goal 5: Achieve gender equality and empower all women and girls".

evidence supports these arguments. According to the latest report on the impacts on GDP of gender equality by 2050, improving gender equality would increase GDP per capita in the EU from 6.1 to 9.6%[2] (EIGE 2017). As a consequence, among the EU's institutions responsible for designing the policies and strategies to address gender mainstreaming and reach gender equality, the European Commission (EC 2006, 2010, 2015) has recently designed three different strategies to achieve gender equality: (i) The Roadmap for Gender Equality between Women and Men 2006–2010; (ii) The 2010–2015 strategy for equality between women and men; and (iii) The Strategic Engagement for Gender Equality 2016–2019; highlighting that "Over the last 60 years, changes and persistent policy efforts have established a trend towards gender equality" (EC 2017, p. 7). However, as this latest report on gender equality published by the EC concludes, "Over the last years, the gaps in pay, employment and working hours have been plateauing". What is more, as it is stated, at the rate of change registered, "it will take more than a century to close the overall gender gap in earnings". Moreover, they add, "in the 21st century, the disproportionate weight of care responsibilities on women will continue to shrink their economic independence and have a lifelong effect on their career, earnings and pensions" (EC 2017, p. 53).

It may be concluded, in the light of the arguments above, understanding the causes and consequences of gender inequalities is an issue that could only be understood from an holistic perspective; that is to say, all the dimensions of the phenomena need to be considered. In this chapter, we focus our attention on the labour market dimension of gender differences. More precisely, we focus on the study of gender differences in employment, unemployment and wages during the years prior and posterior to the Great Recession (GR) in the EU.

[2]See Agénor and Canuto (2015) for an assessment on the long-run positive impact of gender equality on Brazil's economic growth and Elborgh-Woytek et al. (2013) for its overall impact.

2 Gender Differences in the Labour Market: Literature Review and Own Contribution

2.1 Literature Review

Gender differences in the labour market have been widely studied during the last decades (Blau and Kahn 1992, 1995, 1996a, b, 2001, 2013, 2017; Edin and Richardson 2002; Kidd and Shannon 1996; Kunze 2017a; Olivetti and Petrongolo 2008; Ngai and Petrongolo 2017). Empirical evidence shows the existence and persistence of differences in labour market outcomes that left females in a disadvantageous position compared to male counterparts: (i) rates of employment are generally lower among women compared to men; (ii) rates of unemployment have generally proven to be higher for females than for males; while, (iii) females tend to show lower earnings than males.

All these research outcomes on gender differences in the labour market may be classified in two different groups. On the one hand, the research conducted to analyse country-level (within country) gender differences as recently identified by Ngai and Petrongolo (2017) or Blau and Kahn (2017). On the other hand, there is a series of studies performed to understand gender international differences; that is to say, research focused on the causes of the existence of different labour market outcomes across countries (Kunze 2017a; Olivetti and Petrongolo 2008; Blau and Kahn 1992, 1995, 1996a, b, 2001, 2013, 2017).

Whether within a given country or across different countries, empirical evidence sheds light on the possible causes of the existence of these differences; especially regarding the paramount 'gender pay gap' (GPG). According to Blau and Kahn (2017), we can classify these factors in three different groups. In the first group we find the set of factors traditionally used to explain gender differences in the labour market. These are (i) the labour force participation of women, which shows a rapid increase after the World War II mainly linked to the increase in returns to female labour force (Goldin et al. 2006; Juhn and Murphy 1997; Blau and Kahn 2007); (ii) the problem of females' selection bias; as observed it is the wages of those women who certainly participate in

the labour market (Heckman 1979); (iii) the increasing levels of education among women, who have overtaken men in education (Blau et al. 2014) although no clear explanation has been demonstrated yet for this fact (Blau and Kahn 2017); (iv) the work experience and number of hours worked, which explain a higher proportion of gender differences in the past than in the present time, although still important[3]; (v) the gender differences in formal training and turnover related to the hypothesis that women tend to receive less training at work[4] than men due to females' higher probability of quitting a job for family responsibilities; (vi) the gender division of labour and motherhood as non-market job is said to negatively affect females' labour performance; (vii) the occupational segregation, which has diminished but still explains "one-third of the gender gap in 2010" (Blau and Kahn 2017, p. 827); and, finally, (viii) the deeply debated and illegal labour market discrimination,[5] where Becker (1971) was one of the first to provide an (neoclassical) economic analysis.

A second group of factors to explain labour market differences between females and males are (i) the social norms; (ii) the psychological attributes (Mueller and Plug 2006) and (iii) some non-cognitive skills. A good example of these is the lower willingness of women to negotiate (Babcock and Laschever 2003) or the lower female tendency for competition (Bertrand 2011). Similarly, women's risk aversion tends to be higher (Croson and Gneezy 2009). All these personal features are said to ultimately negatively affect the wages of females as well as their representation in high-level jobs, leading to an increase in gender differences.

Finally, a third group of factors, starting with the contribution by Juhn et al. (1991), addresses the explanation of labour market

[3]In the study by Blau and Kahn (2017), it is demonstrated that while gender differences in experience accounted for 24% of the gender gap in the 1980s, it only counted for 16% by 2010.

[4]Notice that less work training eventually implies a reduction of females' relative human capital.

[5]Since 1970 a total amount of 13 pieces of legislation to ensure equal treatment at work have been adopted. In 2000, the new EU legislation laws on equal rights between genders were adopted to prohibit gender discrimination because of racial and ethnic origin, religion and belief, disability, sexual orientation or age (EC 2018)

differences among males and females from the demand and supply forces of the world-economy and the labour-market institutions. Empirical evidence shows that countries with stronger union density tend to show a more compressed wage structure linked to the existence of higher minimum wages that mainly affect women thus narrowing the 'gender pay gap' (Blau and Kahn 1996a); although there is also evidence that highly centralised unions lower relative employment among females by lowering employment and raising unemployment (Bertola et al. 2007).

As pointed above, all these factors may help to explain both, country level gender differences and differences across countries. Some of the factors explaining country-level differences, such as differences in human capital or gender discrimination exerted by employers, may also be extrapolated to explain gender differences across countries. There is evidence of the existence of a positive correlation between country's size of 'gender pay gap' and the related skill regards. Moreover, 'gender pay gap' tends to be higher in countries showing larger sectoral differences (Blau and Kahn 1992, 1995, 1996a, b). However, international differences in the 'gender pay gap' are only understood in the light of the third group of factors; that is to say, when the factors influencing overall wage structure are included. Among these factors, there is some evidence showing the importance of labour market supply and demand forces[6] (Blau and Kahn 2001, 2013, 2017). However, relative wage inequality[7] and non-egalitarian institutional wage-setting[8] are considered the major causes of its existence (Kidd and Shannon 1996; Edin and Richardson 2002; Blau and Kahn 2001). A very enlightening contribution in this respect is the research by Blau and Kahn (2001), where they provide evidence that "rather than to changes over time within

[6]"More compressed male wage structures and lower female net supply are associated with a lower 'gender pay gap'" (Blau and Kahn 2001, p. 138).

[7]In the pair-wise comparison between the US and other advance economies, performed by Blau and Kahn (1992, 1995, 1996b), it is found that the higher wage inequality existing in the US is the main reason for the 'gender pay gap' to be relatively higher. This may be called "the paradox of American women with relatively higher qualifications" (Blau and Kahn 2001).

[8]Using microdata for 22 countries, Blau and Kahn (2001) find strong evidence of the importance of institutional setting to explain the existence of the 'gender pay gap'.

countries" (Blau and Kahn 2001, p. 131) it is the "long-run differences across countries" (Blau and Kahn 2001, p. 131) that can mainly explain differences in the 'gender pay gap'; this is by pointing to the institutional setting as the major cross-country existing difference. Moreover, in order to test their hypothesis they include a series of labour market institutions and settings[9] as explanatory variables of the international differences in the 'gender pay gap'; showing strong evidence that the extent of collective bargaining as well as agreements providing higher wage floors, work towards the objective of wage equality between females and males.

Some researchers have studied the general effects of the 'great recession'[10] on labour market outcomes. There is a series of country-level studies such as the performed by Coulter (2016) for the UK, in which he attributes macroeconomic policies "more supportive of growth than in previous recessions" as well as the "several decades of innovation in labour market policy" Coulter (2016, p. 197) the better performance of the UK economy compared to other European continental countries or the US. However, he also explains that this performance is linked to part-time and insecure job creation together with a fall in real wages and a loss of productivity. A study by Garibaldi and Taddei (2013), for the case of Italy, argues that, as a consequence of the two-tier labour market reforms implemented there is a dual labour market in Italy formed by a group of workers in permanent jobs or insiders and a group of workers temporary jobs in which young generations are specially concentrated and, consequently, burdened. Rinne and Zimmermann (2012) conclude that the German 'miracle' observed during the 'great recession' is a consequence of the combination of a set of variables, from labour market reforms to the crisis mainly affecting export-led companies or automatic stabilisers. They highlight the role of "short-time work and long-term shortages of skilled workers" (Rinne and Zimmermann, op. cit., p. 1) as key factors for the surprisingly

[9]These are: (i) collective bargaining coverage; (ii) minimum wage laws; (iii) unemployment insurance systems; (iv) job protection; and (v) parental leave entitlements (Blau and Kahn 2001).

[10]By 'great recession', we refer to the years 2008–2013.

good performance of the German economy. Additionally, some authors have focused on comparing the outcomes for the different countries in the EU. This is the case of the EC (2017), Dreger et al. (2014) or Boll et al. (2016) for the EU as a whole or the research by Bentolila et al. (2012) in which French and Spanish labour markets are compared. In this last research, authors estimate that if only the Spanish labour market had followed the same labour market protectionism as done by France, 45% of the increase in unemployment during the GR would have been avoided.

However, among the studies on the effects of the GR on labour market outcomes in the EU, some literature has focused specific attention on the effects on gender differences. Following the same classification used before, we can distinguish between: (i) country-level studies; and, (ii) international studies. Within the first group, Addabbo et al. (2015) perform a study in which they analyse the effects of the GR on labour force participation in Italy and Spain. Concretely, they address the important issue of whether responses to the GR have been mainly dominated by the added-worker effect (AWE) or by the discouraged worker effect (DWE), finding that AWE is dominant in the case of Spanish females while DWE drives Italy's females' patrol of decision. De la Rica and Rebollo-Sanz (2015) use the Continuous Survey of Labour Careers in Spain to show the unemployment ins and outs during the GR. According to their findings unemployment during the GR remained almost constant for females; however, they estimate a 1.5% increase in unemployment for males; that is to say, unemployment ins are found to be greater for men. On the other side, they find that while the probability of exiting unemployment decreases 15 percentage points (pp) for males it only decreases 8 pp for females. Piazzalunga and Di Tomasso (2015) show that austerity policies are the major cause explaining the increase in the Italian gender gap. Concretely, according to the estimates of the authors, wage freezing accounts for 100% of the increase in the gender gap registered during the crisis.

Among the international studies at the EU level, Brunet and Jeffers (2017) show that gender gaps have decreased during the GR. However, they work on the hypothesis that this reduction is not always linked to a real improvement of females' labour market

situation. In fact, they point to males' worsening as the major cause for the reduction in the gaps. In the same direction, but pointing at differences among regions and education levels, Jaba et al. (2015) provide evidence of the reduction in the 'gender employment gap' (GEG) in the EU. According to their estimates, both, education and GDP are factors that significantly explain the evolution of the GEG in the EU15 during the period 2003–2012. Baussola and Mussida (2017) perform an analysis to compare unemployment differentials in Italy, Spain, France and the UK. They find that a significant 'gender unemployment gap' (GUG) in Italy and the UK. According to the authors Italy's behaviour is supported by worsening conditions in males during the crisis while, in the case of the UK, it is higher male unemployment rates that explain the finding. Boll et al. (2016) estimates both, the size and factors explaining the existence of the EU 'gender pay gap' (GPG). They find that more frequent part-time jobs among females as well as job segregation are the key drivers of gender differences in earnings in the European context.

As may be concluded, these last type of international studies, which are usually performed for the periods preceding the GR in comparison to the outcomes during the GR, give estimates of the magnitude and possible explanations for the causes behind the existence of gender differences in the labour market for both, the EU in general and in the specific countries of each study in particular. However, we notice that none of these studies gives a detailed description of the endogenous variables most frequently used to measure labour market gender differences. We refer to the variables describing the evolution of (i) employment, (ii) unemployment and (iii) earnings. Moreover, research is focused on the comparison of the outcomes prior to the GR to those found during the GR but very little is concluded for the last years of first signs of recovery, that is to say 2014, 2015 and 2016.[11] The aim of the present chapter is to fill these gaps.

[11]We start at the beginning of the twenty-first century and finish the last year for which data are available (2016).

2.2 Our Contribution on Evolution of Gender Differences

Concretely, our contribution adds an insight to the existing literature on the evolution of gender differences on employment, unemployment and earnings in two ways. First, in addition to comparing the outcomes before and after the GR, we extend the analysis to the last years 2014–2016 of first signs of recovery. Second, we address the comparison among the different countries in our study looking at their outcomes along the period analysed and separately, at the different sub-periods comprising the years prior to the GR, the years of deepest GR and the first years of recovery. Notice that it is beyond the scope of this chapter to address the causes of the existence of gender disparities that are very clearly and proficiently identified in the literature.[12] Our aim is less pretentious, although we still consider the interest of researchers and policy makers aiming to understand the evolution of labour market gender differences before, during and after the GR. In order to reach our aim, we describe the gender dimension of, first, the evolution of the rate of employment; second, the evolution of the rate of unemployment and finally, the evolution of earnings.

The study is performed in two steps. In a first step we look at the evolution of these three dimensions of the labour market for the EU as a whole as well as for a set of countries that we consider especially representative in the EU; these are: France, Germany, Italy, Spain and the United Kingdom (UK). In a second step, we describe the evolution of each variable separately for females and males and that of the corresponding gender gaps in employment, unemployment and earnings. In this manner, we are able to (i) assess the general impact of the GR on labour market outcomes; (ii) compare the overall impact to that for each specific country separately for females and males; and (iii) assess the effect on gender differences. In order to perform the analysis, we use data from the Labour Force Survey (LFS) and the Structure of Earnings

[12]See Sect. 2.1 for a review of the literature.

Survey (SES). Concretely, we compute the 'gender employment gap' (GEG) and the 'gender unemployment gap' (GUG) for the period (2002–2016) from the LFS and use the data on 'gender pay gap' (GPG) available for the period (2006–2015) from SES.

The rest of the chapter is arranged as follows. In Sect. 3 data from LFS is used to describe the evolution of the rate of employment and unemployment as well as to compute and describe the gender employment and unemployment gaps. In Sect. 4 we describe the evolution of the 'gender pay gap'. In all cases, the analysis starts giving a general overview of the evolution for the EU and the countries included; subsequently we look into the gender dimension of the phenomena. Further discussion and main conclusions are provided in Sects. 5 and 6.

3 Towards the Objective of Gender Equality: Employment and Unemployment

The objective of this section is to understand the evolution of labour market gender[13] differences in employment and unemployment from 2001 to 2016. We divide the period analysed into three[14] different sub-periods: (i) The *Pre-Great Recession* period, which comprises the years prior to the burst of the GR from 2001 to 2008 (both included); (ii) The *Great-Recession* period, which starts in 2009 and finishes in the year 2013; and (iii) The *post-Great Recession* period of first signs of recovery, which is observed from 2014 onwards (2014–2016 in our data).

[13]The difference between sex and gender is an issue under debate. However, now, there is arrangement on using the differences in sexes to split statistical data and, as a consequence in the present paper we follow this general agreement. We perform the analysis using data for men and women although we use the term 'gender' as a synonym of 'sex' throughout this chapter. Similarly, we use indistinctly the term women and female as well as men and male.

[14]We have established these three periods according to the evolution of GDP in the euro area. In the years 2009–2014 the GDP at constant prices was below the GDP in 2008. We consider that the financial crisis ended the year when the GDP shows values similar to those prior to the crisis.

Table 1 Rate of growth of the rate of employment (%)

	Pre GR	GR	Post GR
	2001–2007	2008–2013	2014–2016
All			
EU	0.69	−0.49	1.33
Germany	0.96	0.95	0.54
Spain	1.59	−3.18	2.78
France	0.40	−0.28	0.31
Italy	0.97	−1.08	1.01
UK	0.02	−0.27	1.40
Females			
EU	1.17	−0.03	1.45
Germany	1.37	1.42	0.86
Spain	3.67	−1.91	2.59
France	1.01	0.03	0.55
Italy	2.02	−0.29	1.14
UK	0.15	0.03	1.50
Males			
EU	0.36	−0.92	1.19
Germany	0.63	0.58	0.17
Spain	0.17	−4.14	3.06
France	−0.10	−0.55	0.10
Italy	0.33	−1.59	0.92
UK	−0.11	−0.51	1.27

Averages for the periods
Source Authors' own estimates from Labour Force Survey (LFS)

We address the analysis by looking at two different dimensions of the labour market. We describe the evolution of the rates of employment and the rates of unemployment. Although paramount in labour market, we have decided not to describe the participation rate for two main reasons. First, it would not provide significant information, given its relationship with employment and unemployment. Second, because it would imply a longer analysis, which would prevent us from performing the rest of the analysis in detail.

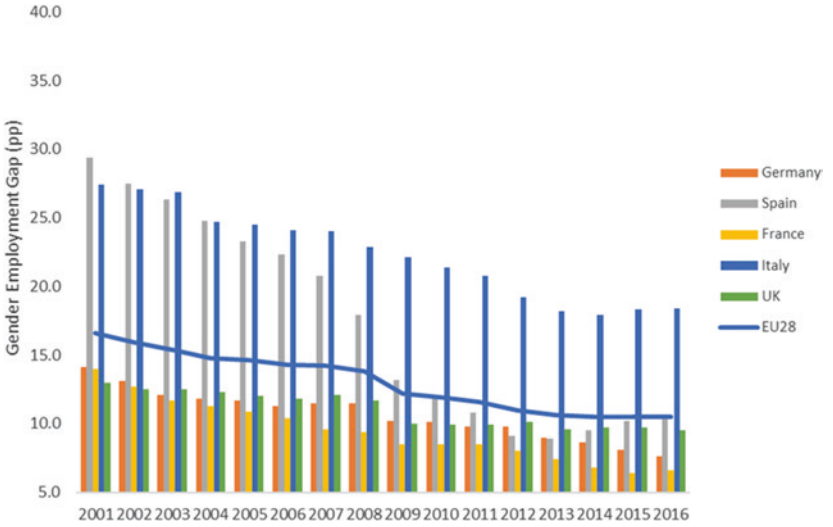

Fig. 1 Evolution of the 'gender employment gap' (GEG) in the EU and a selected group of countries. Period (2001–2016) (*Source* Authors' elaboration from LFS)

3.1 Gender Differences in Employment: The 'Gender Employment Gap' (GEG)

Table 1 shows the average rate of growth of the rate of employment[15] in the EU as well as in the countries included in our analysis (France, Germany, Italy, Spain and the UK) for each sub-period analysed both, for the whole population and distinguishing by gender (females and males). Figure 1 shows, the evolution of the 'gender employment gap' (GEG) in the EU and the countries in our study, as stated above.

[15]The rate of employment is defined as the number of people with a job contract divided by the number of people at the age of work. It is convenient to specify that there is not a common agreement for all the countries in the EU to define this rate. As an example, in Spain, it is considered that the age for a person to legally be able to work is 16, being working age population between 16 and 64 years old (both included). In the case of the EU, working age adults comprises the individuals between 15 and 64 years old (both included). Accordingly, we use the individuals of this range of age in our study, as provided by The Eurostat, defining the rate of employment as the number of people with a job contract in a certain area divided by the number of people who, in that area, are 15 or more years old and younger than 65.

The GEG is defined as the difference between the rate of employment for males and females as in expression 1.

$$\mathrm{GEG}_{tr} = e^{m}_{tr} - e^{f}_{tr} \tag{1}$$

where e^{m}_{tr} represents the rate of employment for males of region r in year t and e^{f}_{tr} is the value of the rate of employment for females in region r in year t.

The rate of employment in the EU is 62.6% at the beginning of the period considered; that is to say, in 2001. As may be drawn from Table 1, during the whole sub-period prior to GR (2002–2008) there is a positive and almost constant increase in the rate of employment, which reaches a peak (65.7%) in the last year of the sub-period, 2008. The average annual rate of growth of employment is equal to 0.69% in this period. After the onset of the GR the positive trend changes. The average annual rate of growth of employment turns negative for the period 2008–2013 (−0.49%). The first year of the crisis the rate of employment falls 1.3 pp driving the rate of employment to a value equal to 64.5%. From this stage on, the rate of employment in the EU plateaus around the 64% level (between 64.1 and 64.2 to be exact). The year 2013 shows the first signs of recovery in terms of employment. There is a trough at 64.1% level followed by a rapid increase in the employment rate, being its value equal to 64.9, 65.7 and 66.7% in the years 2014, 2015 and 2016, respectively. The average rate of growth of employment for this post GR period is equal to 1.33%.

In light of the cross-country evolution of the rates of employment we can conclude the existence of non-uniform patrol of business cycle employment elasticities; that is to say, the response of employment to changes in the business cycle seems to be different across countries. The Spanish labour market is the one that most intensely seems to react to these variations. In the years previous to the GR, when housing bubble reached the maximum intensity, the average rate of growth of the rate of employment was equal to 1.59%. This value, being higher than 0.69%, registered for the EU as a whole. Moreover, the rate is highest among all the countries studied. As a result, the rate of employment increases

from 57.8% in 2001 to 64.5% in the year 2008. During the years of the GR, however, employment destruction is also greater, in comparison to the rest of countries in our study. Between the years 2008 and 2013, the average rate of growth of the rate of employment is equal to −3.2% (negative and highest among the countries in our study). The lowest value for the rate of employment is registered in 2013 (54.8%). The recovery of the economic cycle from 2013 onwards accelerates the creation of employment. Accordingly, the average rate of growth of the variable that occupies our attention again yields positive (2.8%).

The most singular performance is displayed by the German economy. After a period of stagnation at the beginning of the century, there is a persistent increase in the rate of employment for all the years considered. As may be drawn from Table 1, the average rate of growth of the rates of employment was positive for the three periods considered. What is more, it was even lower (0.54%) for the years of recovery than for the central years of the crisis (0.95%). As a result, the rate of employment grew from a value slightly higher than 65% in 2001 to a value equal to almost 75% in 2016.

The rate of employment in France plateaus at around 64% value for the whole period (2001–2016). The French labor market shows the lowest sensitivity to changes in the economic cycle. During the years of economic growth at the beginning of the period analysed; that is to say, before the burst of the GR, the rate of employment increased at an average rate equal to 0.40%, somewhat higher than that shown during the last years of recovery (0.31). During the years of the crisis, the growth rate was practically identical to that of the UK (0.27%). The evolution of the rate of employment in the UK, on the other hand, presents some singularities, especially in view of the outcomes for the rest of countries studied. During the years of economic growth prior to the GR, the rate of employment plateaued at around 72%. The average rate of growth of the rate of employment for that period was equal to 0.02%. Later, during the years of the crisis the rate of employment decreased somewhat, although not significantly; it has shown signs of recovery again during the recent years, when the rate of employment has reached a value equal to 73.5%.

The analysis of the evolution of the rate of employment allows concluding the existence of a similar pattern between the Italian and the Spanish labour markets. In both countries employment had similar intensities during the GR. In addition, these two countries had the lowest employment levels among the countries selected. The value registered by the rate of employment in Italy at the beginning of the period (year 2001) was equal to 55.5%, being 2.3 pp higher for Spain (rate of employment equal to 57.8%). At the end of the period, the value of the respective rates was equal to 57.2 and 59.5%; keeping Italy the initial distance relatively to Spain in 2.3 pp. Moreover, these two countries also had the lowest rates of employment relatively to the average registered for the EU.

The evolution of the rate of employment, however, is not identical for females and males. At the beginning of the period (2001) the value of the rate of employment for men was equal to 70.9% while, at the end of the whole period (2016) the value was equal to 71.9%, which implies an average increase for the whole period analysed equal to 1.4%. As shown in the estimates of Table 1, prior to the GR, the rate of employment for men had an average increase equal to 0.36%; during the GR, the rate diminished at an average rate equal to −0.91% and, during the years of first recovery the value registered an average increase of 1.19%.

The rate of employment for females at the beginning of the period (2001) was equal to 54.3%, while the value at the end of the period was equal to 61.4%. This evolution implies an average growth of women's rate of employment equal to 13.7%. The pattern of increase, however, is not constant. The years prior to the GR, female rate of employment increased at an average rate equal to 1.17%; the years of the GR implied a stagnation of that evolution, being the average rate of growth even negative and equal to −0.03%. Finally, the first years of recovery showed a very optimistic scenario, with the average rate of growth equalled to 1.45% (see column three in Table 1).

Especially helpful in understanding the evolution of differences in employment between genders is the 'gender employment gap' (GEG) presented in Fig. 1. As it is observed, at the beginning of the period gender differences in employment in the EU amounted to 16.6

percentage points (pp). The GEG was positive for the whole period; it reached a value equal to 10.5 in the last year (2016). In light of these two values, we get the implication that by 2016, 36.7% of the gender differences in the rate of employment existing in 2001 disappeared. This finding leads us to reach a second conclusion: the existence of convergence between the rates of employment for women and men during the period analysed. However, this apparently positive result in the path for raising the challenge of gender equality is also an indication of the long way ahead; since two-thirds of the GEG existing at the beginning of the 2000's has not been closed yet (as revealed by the difference in more than 10 pp between the rates of employment of men and women in the year 2016).

The improvement in the GEG in the EU during the years of crisis is driven by the asymmetric behaviour of the rates of employment registered for each gender. As explained above, the rates of employment have evolved differently for males and females in the three sub-periods considered; that is to say, before, during and after the GR. Prior to the GR, the rate of growth of the rate of employment is positive for both, males and females. During the GR, this rate of growth turns to be negative also for both, females and males, being practically equal to zero (−0.03%) for females, and significantly negative for males, with the value being equal to −0.92%.

Data on the evolution of the rate of employment and the GEG for France, Germany, Italy, Spain and UK show a similar trend to that already described for the EU. The GEG decreases in all of them during the years considered, albeit with different intensities and rhythms. The initial situations, as well as the final ones, however, reveal some differential characteristics among the countries considered. In the two southern European or Mediterranean countries (Spain and Italy) during the years prior to the crisis, the male employment rate plateaued at 70% level or above. During the last three years of economic growth, the rate of employment for females was below 50% in Italy, being somewhat higher in Spain. In 2001 this gap was equal to 29.4 pp in Spain and 27.4 pp in Italy. However, in 2008 the GEG decreased to a value equal to 22.9 pp in Italy and 17.9 pp in Spain. This evolution, in both countries, was the result of an average growth rate of female

rate of employment higher than that for males. In Italy, for the period 2001–2008 the average rate of growth for females was equal to 2.02%, compared to 0.33% for males. In Spain these values were, respectively, equal to 3.67 and 0.17%. The years of the GR contributed to correct the GEG in both countries, especially in Spain where it fell to 8.9 pp in 2013. The decline in Italy, although significant, was somewhat lower and remained, for the same year, at 18.2 pp. In both cases, this decrease was the result of a greater fall in the rate of employment of males compared to females. In the Spanish case, during the period 2009–2013, the average growth rate of the rate of employment for males was equal to −4.14%, while this same rate for women was equal to −1.91%. In Italy these values were, respectively, equal to −1.59 and −0.29% (see Table 1). In the three years of economic recovery, the GEG in Spain increased slightly with respect to the value registered during the GR due to the fact that the rate of employment grew faster for males than for females. However, the Spanish GEG in 2016 was located at 10.5 pp value, exactly equal to the average for the EU; while in Italy, this indicator remained practically constant at around the 18 pp level.

Among the countries, France showed the lowest GEG. In 2016, this indicator was equal to 6.6 pp; that is to say, 4 points lower than the EU's average and almost 12 pp lower than the value observed for Italy. During the 16 years studied, this indicator diminished by almost 8 points. Together with Spain, France is the country in which the reduction in the employment gap is most noticeable. Again, the pattern of behaviour of this indicator responds to the same characteristics already highlighted. In the years of economic growth a better performance of the average rate of growth for females than males is found. In the central years of the crisis, in this French case, we notice a negative rate of growth of employment for males and positive for females; while, during more recently, there is a somewhat higher growth for the rate of employment of females.

The UK and Germany have also some remarkable features. With regard to the first of these two countries, it should be noted that during the years prior to the crisis, the GEG maintained considerable stability, at least when compared with what was observed in other countries. In 2001, this indicator was equal to 13 pp and in 2008, it decreases

to 11.7 pp. During the crisis, an inflection point is detected that leads the GEG up to 10 pp. This trend, however, has no continuity during the rest of the years which leaves this indicator in the UK at 9.5 pp in 2016. In short, the UK is the country with the less radical evolution of this indicator. In Germany, also, the GEG diminishes significantly during the whole period considered. The reduction almost halves, from a value equal to 14.1 pp in 2001 to 7.2 pp in 2016. However, the most remarkable fact in this country is that this reduction is accompanied at all times by an increase in the rate of employment for both genders, although, logically, the average growth rate of the rate of employment for females is always higher than the rate of employment for males. The years of the GR also marked a turning point, as in the rest of the countries, although in this case the characteristic is that the rate of growth of females' employment was positive and higher than that of males.

In short, on view of the GEG there was a positive evolution towards gender equality during the years of the GR. This finding is related to the fact that, the economic crisis seems to have affected negatively males' employment than females', leading to a general narrowing of the GEG in the EU. In fact, in the middle years of the GR it even reached its lowest historical values. However, the GEG indicator does not account for the type of employment that is destroyed nor, and this is the relevant argument, for the type of employment that is created and accessed by women. In subsequent sections, we discuss the evolution of the rates of unemployment and wages, which can give us evidence of the type of employment in which women performed better.

3.2 Gender Differences in Unemployment: The 'Gender Unemployment Gap' (GUG)

In this section, we show the evolution of the gender differences in unemployment. We proceed in a similar manner as in the previous section. In a first step, we explain the evolution of the general rate of unemployment, and analyse the evolution of gender differences both, in the EU in general and in the countries studied, in particular. We also split the period analysed into the same three sub-periods as above; that

Table 2 Rate of growth of the rate of unemployment (%)

	Pre GR	GR	Post GR
	2001–2007	2008–2013	2014–2016
All			
EU	−2.90	9.67	−7.59
Germany	−0.09	−6.59	−7.57
Spain	2.06	19.65	−9.08
France	−0.59	7.14	−0.64
Italy	−3.91	12.90	−1.01
UK	1.78	6.93	−13.74
Females			
EU	−3.17	7.92	−6.88
Germany	−0.03	−8.35	−8.11
Spain	−1.81	16.49	−7.09
France	0.47	5.39	−0.99
Italy	−4.70	9.35	−0.61
UK	2.26	7.30	−12.74
Males			
EU	−2.52	11.06	−8.03
Germany	0.02	−5.09	−6.43
Spain	6.32	22.86	−10.89
France	−1.63	8.74	−0.27
Italy	−2.91	16.35	−1.70
UK	1.69	6.69	−14.38

Averages for the periods
Source Authors' own estimates from Labour Force Survey (LFS)

is to say, the years prior to the crisis or pre-GR period (2002–2007); the years of the crisis or GR period (2008–2013) and the years of first signs of recovery, namely post-GR period (2014–2016). Table 2 contains the average rates of growth registered for each sub-period for the whole sample as well as for each gender.

Figure 2 shows the 'gender unemployment gap' (GUG) for the EU as well as for all the countries in our study (France, Germany, Italy, Spain and the UK). The GUG is defined as the difference between the rate of employment for females and the rate of unemployment for males as in Eq. 2.

$$\mathrm{GUG}_{tr} = u^{f}_{tr} - u^{m}_{tr} \tag{2}$$

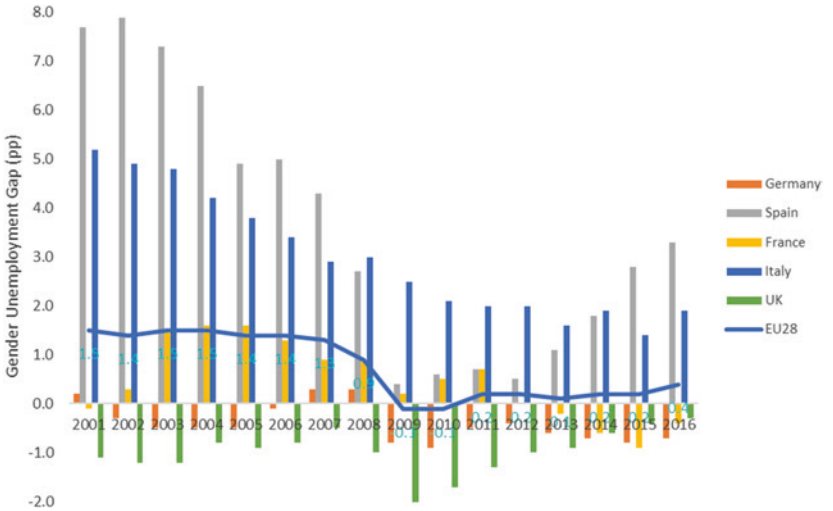

Fig. 2 Evolution of the 'gender unemployment gap' (GUG) in the EU and a selected group of countries. Period (2001–2016) (*Source* Authors' elaboration from LFS)

where u_{tr}^{f} represents the rate of unemployment for female of region r in year t and u_{tr}^{m} is the value of the rate of unemployment for males in region r in year t. Recall that, contrary to the case of employment in which the GEG is computed as the difference between the male and the female rates, the GUG is computed as the female rate minus the male rate.

As may be seen in Fig. 2, at the beginning of the period (2001) the rate of unemployment in the EU was equal to 8.7%. During the first years of the century, this rate grew slightly, to stand at 9.3% in 2004. However, once the effects of the cycle changed, associated with the technological crisis of the late 90s of the last century were overcome, the unemployment rate slowly decreased until reaching a value equal to 7% in the year 2008. In the central years of the crisis (2008–2013), it increased until reaching a maximum value of 10.9% in 2013; it then started a slow decline and stood at 8.6% of the active population in 2016.

The described evolution of the rate of unemployment hides very different situations in the different countries that constitute the EU. The most dramatic situation occurred in the Spanish economy, where the unemployment rate increased from 8.2% in 2007 to 26.1% in the third quarter of 2013. The average growth rate of the rate of unemployment during the years of the crisis was equal to 19.7%. From that moment on, it began to decrease, although at a significantly lower speed. In the years of recovery, the unemployment rate decreased at an average rate of 9.1%.[16]

Data for the cases of Italy and France are not as dramatic as for the case of Spain, although the years of recovery are not associated with a clear decrease in their respective unemployment rates. The values before the crisis have not yet been recovered. In the case of Italy, the unemployment rate practically doubled. In 2007 it was equal to 6.1% and in 2016, after a slight decrease, the value stabilised at 11.7%. The unemployment rate of the French economy increased by five points, from 6.7% in 2008 to 11.7% in 2016. The rate of unemployment in the UK best reflects a correlation with the economic cycle. During the years prior to the crisis, this rate was close to 5%, somewhat below its long-term equilibrium value. In 2011 it reached a peak (8.1%) while, at the end of the period considered, it returned to the value shown during the pre-crisis period. The German experience, as already mentioned in the previous section, is the most singular among the countries studied. After registering a value equal to 11.2% in 2005, the rate decreased to 4% value in 2016.

Observing the evolution of the rate of unemployment for the different genders allows identifying interesting patrols. At the beginning of the period, in 2001, the rate of unemployment for males in the EU was equal to 8.0%. At the end of the whole period (2016), the value was

[16]The unemployment rate in Spain has historically shown high records. The long-term average, an indicator that we could identify with the equilibrium rate of unemployment has been around 14% since the mid-1980s. The value then of the unemployment rate in 2016 would have to be compared with this equilibrium value and not so much with the unemployment rate before the crisis. In the medium term the recovery of the unemployment rate before the crisis would be very difficult to estimate.

equal to 8.4%. The rate increased until 2004; afterwards a decreasing trend emerged, which on average, amounted to 2.52% for the Pre-GR period. During the GR the rate of unemployment increased to an average rate of 11.06%; it again diminished at an average rate equal to 8.03% during the Post-recession period. Females showed a very similar trend. At the beginning of the period, the rate of unemployment for females was equal to 9.5%. Unemployment increased during the years 2002, 2003 and 2004 until it reached the peak 10.1%. From 2005 to 2008, a reduction in the rate of unemployment was observed, reaching a trough at 7.5% level. The GR exerts a negative impact on female's unemployment. The rate increased at an average rate equal to 7.92%, reaching the maximum value of 10.9% in the year 2013. The first years of recovery show a reduction in the rate of unemployment faced by females. The rate of increase (decrease) equalled to −6.9% on average; by the end of the period analysed the rate of unemployment for women amounted to 8.8%.

In light of Fig. 2, we observe that at the beginning of the period, the GUG reached a maximum value of 1.5 pp; that is to say, in the year 2001, the rate of unemployment for females was 1.5 pp, higher than the rate of unemployment of males. This difference plateaued for the whole Pre-GR period between 1.5 and 1.3 pp values. The year 2008 registered a clear decrease in the GUG, to the value 0.9. The historically minimum −0.1 pp was found in 2009, bringing females to be, for the first time, an advantage compared to males. Recall that GUG being negative implies that the rate of unemployment among males is higher than the rate of unemployment for females. This situation was repeated in the year 2010 to, again, become positive from 2011 onwards. As will be seen, these same tendencies are repeated for the rest of countries in our study; although with some singularities. A priori data seem to support a reduction in the GUG; that is to say, it seems that the crisis exerted a positive impact to diminish gender differences in unemployment. However, taking into account that the gap worsens again during the years of economic recovery, this improvement may be hiding not so much as an advance in gender equality, but an unequal behaviour of women and men in the labour market during the economic recession.

The trend described by the GUG in France responds to the aforementioned pattern. During the first years of the century, when European economies were emerging from a short recessive cycle, the gap increased to reach a value equal to 1.6 pp. With the first symptoms of the crisis, the rate of unemployment of females and males converged, leading to a reduction in the GUG; which, by the end of the crisis, is even negative. At the end of the period, however, a change in the trend is noted; although it is not yet possible to affirm whether it is a turning point or not.

The example provided by Germany has remarkable singularities. During the years before the GR, which, and as we have noted above, are years of strong recession in the German economy until 2005, when the behaviour of the GUG followed the pattern indicated. Between 2001 and 2005, it decreased until reaching a negative value equal to −0.5 pp at the end of the period. When recovery began, the gap increased to decrease again in 2009. Since then, and with small variations, it has remained negative. The same as for the German case, in the UK, the GUG takes negative values for all the years considered. It is the only country we are studying for which females' rate of unemployment is always lower than males'. In any case, the pattern of behaviour found for the rest of countries during the years of crisis and those of recovery is also observed. In the years prior to the GR, and as the effects of the crisis of the last century were overcome, the GUG decreased. In the year 2001, it was equal to −1.1 pp and in 2007 to 0.5 pp. From this moment on, and coinciding with the beginning of the GR, again the rate of unemployment for males grew more than for females and the GUG increased to −2.1 pp in 2009. By the end of the GR, an almost full convergence of the rates of unemployment between females and males is observed; the GUG being almost zero at the end of the period (in 2016, the GUG is equal to −0.3 pp).

The indicator that now occupies our attention (GUG) shows, at the beginning of the period (2001), the highest value of all those observed so far (7.7 pp). The rate of unemployment for females was unusually high in relation to that of men at that time. During the years of economic growth prior to the GR, however, and unlike what was observed in other countries, this indicator decreased uninterruptedly and with intensity. In 2008, the GUG was equal to 2.7. In seven years, therefore, the indicator

decreased by five percentage points. In the years of crisis, and as concluded for other countries, also in Spain a different behaviour of females' and males' rates of unemployment emerged. Although unemployment for both (females and males) grew dramatically, to stand above 25% in 2013, the differential behaviour characteristic of the moments of expansion seems to fade. In 2012, the value of the GUG was equal to 0.5 pp, the lowest observed. However, when the economy began to recover, the different evolution of these two rates once again emerged. By the end of 2016, the GUG rose to 3.3 pp. In any case, what should be highlighted is that this gap has not yet returned to the values prior to the crisis.

Something similar could also have happened in the Italian job market. As we have just seen for the Spanish case, similarly in the case of Italy the period begins with a strong difference in the unemployment rates of men and women, which is reflected in a high value of the GUG. In 2001, the value of this indicator was equal to 5.2 pp, somewhat lower than in Spain but also well above the EU average. From that moment on, the rates of unemployment began to equalise and the gender gap closed, as seen in the decline in the value of the GUG to 1.6 pp in 2013. In Italy, the years of the crisis do not seem to exert such an intense effect as observed for other countries, including Spain. Although it is also true that during the years of economic recovery the gap remained very contained. In 2016, the value of the GUG was equal to 1.9 pp.

In short, the evolution shown by this indicator reveals some trends that may be highlighted as a conclusion. First, gender differences in this area are clearly decreasing. In countries such as Spain and Italy, which started from very high GUG values, it is clear that at the end of the period studied the differences in unemployment rates have narrowed significantly and, as a result, also the value of the GUG. In countries, such as Germany and the UK, spreads are clearly favourable to females; in the German case they were from the end of the last decade and in the UK from the beginning of the period. France also shows the same trend, as do all the EU countries. Second, it also seems evident that the rate of unemployment for females has a differential behaviour compared to the unemployment rate of males during the period of the crisis. This differential behaviour can respond to multiple causes on which we return later.

4 Gender Differences in Earnings: The 'Gender Pay Gap' (GPG)

In this section, we analyse the evolution of the gender differences in earnings in the EU and in the countries included in our analysis. As we have shown in the analysis performed to account for gender differences in employment and unemployment in the light of the GEG and GUG, our aim is to describe the evolution of earnings as well as the evolution of the 'gender pay gap' (GPG) in the period prior to the GR or Pre-GR (before 2008), the most detrimental years of the GR (2008–2013) and the first years of recovery or Post-GR (2014-onwards).

Before proceeding, it is important to highlight that data availability for the GPG depends on the structure of earnings survey (SES), which is not performed annually. Accordingly, we use the data provided by the Eurostat for the years 2006, 2010 and 2014, for which gross hourly earnings are available. Also the data on the GPG published for the period 2007–2015 are utilised in order to observe more closely the evolution of gender differences during the period of our investigation. Data from SES on earnings are available for all the countries as well as for the EU28; however, data on the GPG are only available at country level and they are missing in some cases. These limitations of data availability, however, do not prevent us from observing the evolution of gender differences before during and after the GR given that at least we have one point available for every sub-period and country in our study.

Table 3 provides the rate of growth of average hourly earnings from 2006 to 2010 and from 2010 to 2014. Figure 3 shows the evolution of the 'gender pay gap' (GPG) for the EU and for all the countries studied: France, Germany, Italy, Spain and the UK. The 'gender pay gap' (GPG) is defined as the difference between the earnings of males and females as a percentage of the earnings of males (see Eq. 3),[17] as follows:

$$\mathrm{GPG}_{tr} = \frac{w_{tr}^{m} - w_{tr}^{f}}{w_{tr}^{m}} 100 \tag{3}$$

[17]This is the method followed by the European Commission to compute the 'gender pay gap' (GPG).

Table 3 Rate of growth of average hourly earnings (%)

	Pre GR	Post GR
	2006–2010	2010–2014
All		
EU	5.15	3.62
Germany	2.92	7.95
Spain	9.79	5.07
France	3.35	11.60
Italy	7.28	5.87
UK	−6.84	−3.92
Females		
EU	5.69	4.11
Germany	3.40	8.64
Spain	12.39	6.23
France	3.46	11.92
Italy	6.69	5.39
UK	−6.45	−2.08
Males		
EU	5.12	3.51
Germany	2.91	8.72
Spain	10.08	4.62
France	3.72	11.72
Italy	7.74	6.35
UK	−7.48	−5.17

Averages for the periods
Source Authors' own estimates from Structure of Earnings Survey (SES)

where w_{tr}^{m} is the average gross hourly earnings of males in region or country r, at time t or, in our concrete case, year t, w_{tr}^{f} is the average gross hourly earnings for females in country r in year t.

Data for the EU as a whole reveal an increase in average earnings from 2006 to 2010 and from 2010 to 2014. While average hourly earnings in 2006 amounted to 13.41 monetary units (m.u.), the value reaches the 14.1 level in 2010 and the 14.61 level in 2014. This implies an increase equal to 5.2% from 2006 to 2010 and equal to 3.6% from 2010 to 2014, as may be seen in Table 3. Consequently, if we accept 2006 being representative of the period prior to the GR, 2010 as the representative of the GR and 2014 as an instrument to describe the post-GR period, we conclude that, during the GR the rate of growth of hourly earnings decreased by 1.53 pp.

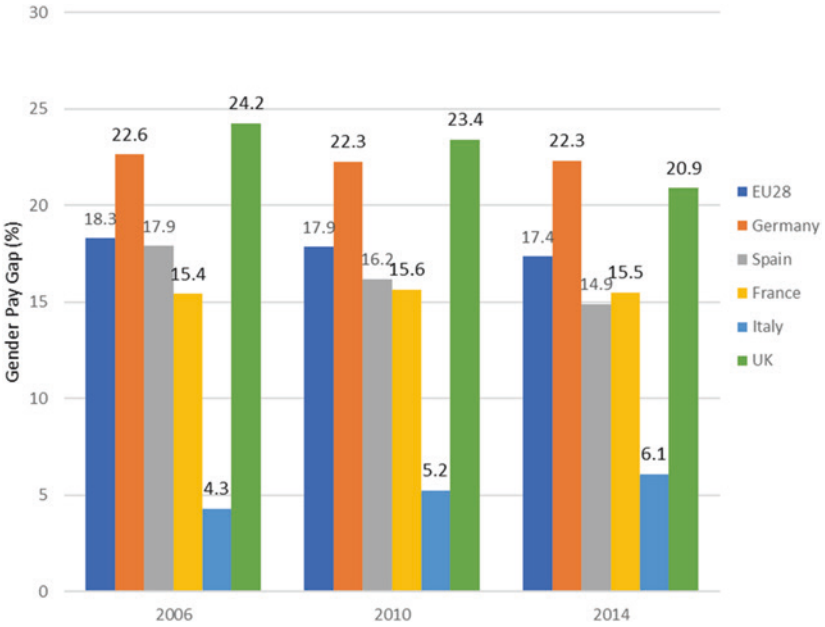

Fig. 3 Evolution of the 'gender pay gap' (GPG) in the EU and a selected group of countries. Years 2006, 2010 and 2014 (*Source* Authors' elaboration from LFS)

All the countries in our study, with the exception of the UK, show a similar behaviour: the earnings per hour worked increased. The rates of growth, however, differ. In the years prior to the crisis (see Table 3) the most intense increase occurred in Italy and Spain. These rates were moderated during the years of the recession, changing for Spain, from 9.79 to 5.07% and for Italy from 7.28 to 5.87%. The final result in both countries, however, is an increase in hourly earnings. In Spain, it increased from 11.13 m.u. to 12.84 m.u. and in Italy from 13.19 to 14.98. During the years of the GR, the greatest increases were recorded in France and Germany. In the former country, the increase was 11.6% and in the latter 8.0%. These two countries also had growth rates during the pre-crisis period. In absolute terms, this meant an increase in the hourly gain that happened, in France, from 14.01 m.u in 2006 to 16.16 m.u in 2014. In Germany these values were, respectively, 15.77

and 17.52. In the UK, as we have already mentioned, hourly income decreased in both periods. In 2006, the profits per hour were equal to 17.25 m.u and in 2014, they fell to 15.4 m.u.

The evolution of gender differences in earnings for the different countries as gathered by data on GPG in Fig. 3 allows grouping the countries in three different sets: (i) the countries for which gender differences in earnings have not increased; they either decreased significantly during the GR, which showed a stable GPG for the whole period (France and Germany); (ii) countries for which gender differences slightly increased during the GR as revealed by the GPG of Italy and, finally; (iii) countries for which gender differences in earnings diminished during the GR; that is to say, the countries showing a reduction in GPG (Spain and the UK).

For the two countries in the first group, that is to say, the cases of France and Germany, hourly earnings have increased from 2006 to 2014 for both, males and females. In France, the rate of growth of earnings is practically similar for both genders, approximately 3% in the period 2006–2010 and almost 12% in 2010–2014. However, females do always show a lower level of earnings, which supports the existence of a positive GPG for the whole period. In 2006, male earnings were 15.4% higher than female earnings. This difference, as revealed by the evolution of the GPG, slightly increased from 2006 to 2010 and to 2014; though the GPG plateaued at 15.5% average level in all the years analysed. In conclusion, the GPG in France has not significantly changed during the GR.

In the case of Germany, increases in earnings were practically identical for both genders (see Table 3) and also for the two periods of our study. However, while average hourly earnings in 2006 were equal to 17.5 m.u. for men, women only earned 13.54 m.u. This difference implies a value for the GPG equal to 22.6%. In 2010, being females' earnings equal to 14 compared to 18.01 of males, the GPG amounted to 22.3%. This difference between the earnings of both genders remained constant in the year 2014. According to this, we can conclude that, during the GR gender differences in earnings in this country almost remained constant.

The second group of countries, comprising Italy and Spain, register an increase in the average hourly earnings for both, females and males, from 2006 to 2010 and from 2010 to 2014. Initial earnings for Italian males were equal to 13.44 m.u. Those earnings increased by 7.74% from the period prior to the crisis and, at a rate equal to 6.35% from 2010 to 2014. In the case of the Italian females, initial earnings amounted to 12.86 m.u. The rate of growth of earnings from 2006 to 2010 was equal to 6.69% and from 2010 to 2014, at a rate of 5.39%. As a consequence of these growth rates, and taking into account the differential in earnings existing at the beginning of the period, it is easy to conclude that the GPG in Italy increased between 2006 and 2014. In the first year the value of this indicator was equal to 4.3%, while in 2014 it increased to 6.1%. In any case, it is convenient to notice that Italy is the country best performing in terms of the GPG, being the country where this indicator is historically lowest among the countries studied.

The Spanish GPG shows a decreasing trend. In 2006, the value of this indicator was equal to 17.9 and after decreasing to 16.2 four years later, in 2014 it was equal to 14.9. This trend is the result of a differential behaviour in the growth rates of hourly earnings. This statement is clear in view of Fig. 3. Between the years 2001 and 2007, this rate was equal to 12.39% for females and 10.08 for males. In the period 2014–2016 these values were, respectively, 6.23 and 4.62%.

Data for the UK reveal a similar trend to that described for Spain. In the year 2006, the GPG was equal to 24.2. In 2010, it decreased one pp to 23.4% value; the reduction continued until 2014, when it reached 20.9%. Unlike in Spain, in the UK, the relative convergence between the earnings of males and females occurred as a result of negative variations in the respective rates of growth of this variable (see Table 3). Between 2006 and 2010, the rate of growth of average hourly earnings for men decreased by 7.5% and for women by 6.5%. During the years of recovery (2010–2014) the rates remained negative, with values for men and women equal to 5.2 and 2.1%, respectively.

In short, the data that we have been commenting on the evolution of the GPG allows to confirm that, during the GR, gender differences, measured by wage differential in hourly earnings, remained constant

(Germany and France) or even decreased (Spain and UK). The only case in which a slight worsening may be detected is that of Italy. However, this country is the one showing the lowest GPG among all the countries studied.

5 Further Discussion of the Results

We have provided a picture of the evolution of labour market gender differences in the EU in the periods prior and posterior to the Great Recession (GR). Concretely, we have observed the evolution of the rate of employment, the rate of unemployment and the level of earnings during the period (2002–2016). In order to perform our study, we have computed the 'gender employment gap' (GEG) and the 'gender unemployment gap' (GUG) for the period (2002–2016) from the data published by The Eurostat from the Labour Force Survey (LFS). Additionally, we have used available data on 'gender pay gap' (GPG) from the Structure of Earnings Survey (SES) published also by The Eurostat for the period (2006–2015).

In a first step, we have analysed the evolution of these three dimensions of the labour market for the EU as a whole as well as for a set of particular countries: France, Germany, Italy, Spain and the United Kingdom (UK). In a second step, we have described the evolution of each variable separately for females and males and that of the corresponding gender gaps in employment, unemployment and earnings. This way of proceeding has allowed: (i) identifying the general impact of the GR on labour market outcomes; (ii) comparing the overall impact to that for each specific country separately for females and males; and, (iii) quantifying gender differences during the period analysed.

Data show that, during the GR gender differences have not significantly increased; moreover, the outcomes register signs of reduction for some of the countries studied. The positive evolution of the GEG provides evidence of the continued and increasing participation of females in the labour market from the beginning of the century. In the EU as a whole, this gap diminishes from 16.6 to 10.5% in 2016. What is more, the reduction registered is even greater for some countries. In Spain, the

value of the GEG was equal to 29.4% in 2001, diminishing to 10.5% in 2016. In Italy, the respective values were equal to 27.4 and 18.4%. The gap in unemployment (GUG) points also to a more egalitarian behaviour of the rates of unemployment for women and men. However, this gap gives also evidence of a different behaviour between females and males during the crisis. The GUG significantly diminished during the crisis. In contrast, it increased during the years of recovery. Finally, the positive rhythm at which the earnings gap was narrowing prior to the GR slowed down during the GR. According to the data, during the years of the GR the GPG plateaued in France and Germany while in Spain and the UK it diminished. Italy is the only country for which the GPG increased during the crisis; though this is also the case with lowest GPG among all the cases analysed.

In light of this data, it would be straightforward to reach the conclusion that gender differences have diminished during the GR. However, a major question remains: what were the causes of the gender convergence in employment, unemployment and earnings during the GR? Obviously, gender convergence may appear for two main reasons. One desirable possibility is the improvement of female situation, which, *ceteris paribus*, would lead to women approaching men's labour market outcomes and, as a consequence, a narrowing of the gender employment, unemployment and earnings gaps. However, there is the chance for another reason to drive gender convergence: the non-desirable evolution of males' outcomes for the worse. That is to say, whenever we are dealing with outcomes measuring relative positions the individual position of all the parts in the set must be analysed before reaching any conclusion. This is precisely the case in our data. A very interesting piece of research by Brunet and Jeffers (2017), in which gender effects of the GR in 15 EU's countries are studied, the authors conclude that labour market gender gaps during the years of the crisis not always reflected an improvement of females' situation in the labour market. On the contrary, it is often the deterioration of males' condition the main reason for the narrowing of gender gaps.

In any case, the positive trend towards gender equality registered before the burst of the GR (Olivetti and Petrongolo 2016) also continued during the crisis. The indicator that most clearly reflects this

positive evolution towards gender equality is the increase in females' rates of participation and employment. The increasing participation of females in the labour market responds to both demand and supply factors. From the demand side, the development of public and service sectors, especially health and education related vacancies, have proven to be major drivers for the increasing female participation in the labour market (Thévenon 2013; Anghel et al. 2011). Additionally, a typical contractual relationship, such as part-time contracts, fixed-term contracts or contingent workers, appear also to be positively correlated with the increase in female employment, perhaps for it matches the supply of female labour force. It is convenient to highlight that this patrol of occupational and sectoral segregation was not modified during the GR. These phenomena, as we mention below, also affect gender behaviour in unemployment and earnings.

The better employment performance observed during the GR for the different countries in the EU may also be related to a series of public interventions aimed to stimulate females' labour supply. Moreover, these policy measures may explain some of the differences observed in the light of the evolution of the GEG between the countries studied. As explained in the theoretical framework, the existence of international gender disparities may only be understood on the light of the different institutional frameworks governing in each country. We mainly refer to two types of frameworks. On the one hand, those regulating the labour market, such as union density or the existence and level of minimum wages, is one type. On the other hand, there is the important series of policies regulating family-labour relations, as is the case of parental leaving. Empirical evidence points at motherhood and childcare as the main barrier for females' labour market participation (Olivetti and Petrongolo 2017). In an attempt to solve this reality, there is a series of measures developed in the different EU countries oriented to help females with this regard of familiar responsibility. These policies have been oriented to constitute a work-life balance friendly institutional environment. Among the measures, there is the compulsory pre-primary education, the expansion of free childcare hours or the extension to fathers of the parental leaving. These measures may also help to raise full-term employment among females. The effect of these policies is, nevertheless,

contingent of the interaction between the regulatory framework of labour relations as well as the degree of development of the remaining social policies (OECD 2017). Additionally, social behaviour patterns do also interact with these measures, driving to different results for the different countries. Existing differences between countries, then, may continue even if the same or very similar policies are implemented.

The evolution of the 'gender unemployment gap' may be influenced by several factors operating in opposite directions for each gender. It is convenient to highlight that, as shown in the present chapter, the GUG is relatively low for the EU in general. Before the GR the value of the gap was equal to 1.3%. The most remarkable finding, however, is not as much the value of the gap as the evolution it presents during the years of the crisis. A priori, we would expect higher values for the rates of unemployment of females in comparison to those registered of males. This hypothesis results from all the arguments developed in this chapter. In a very simple manner, a typical contract is more frequently used among females. In the context of recession, firms use initially these types of contractual relationships to adapt non-expected demand reductions without the necessity of affecting the level of wages. Accordingly, at the beginning of the period of recession we would expect employment to more intensely affect female workers and, thus, we would also expect to find a divergence between the rates of unemployment registered for females and the rates of unemployment registered by males during the years of recession. However, we observe that this has not been the case during the GR. The Spanish economy provides a convincing case study to understand this paradox. Between the years 2007 and 2013 3,440,900 job contracts were destroyed in Spain. In contrast, a total amount of 322,700 part-time contracts were created. If we decompose the number of job contracts destroyed by gender, we conclude that 75% of job destruction corresponds to males' job vacancies, being the remaining 25% job females' job destruction. Among the part-time new hiring, 62% correspond to males and 38% to females. Moreover, the relative presence of women in full-time jobs increased from 38.6% of total jobs in 2007 to 42.6% in 2013; while females' relative presence in part-time job diminished from 83 to 75% in the respective years 2007 and 2013. These flows of job creation and destruction allow

hypothesising and explaining the convergence on the rates of unemployment of females and males during the GR; that is to say, the reduction in the GUG during the years of the crisis. Before advancing this hypothesis, it is convenient to go back to the research by Brunet and Jeffers (2017), where they point at a convergence process that could stem more from a relative worsening of male employment than from the improvement in females' labour market situation. Clearly, data for Spain are in line with this finding. Data show that female employment is less pro cyclical than male employment. Moreover, this stability is noticed for both, full-time and part-time female jobs.

However, we would like to focus attention on the first type of contracts; that is to say, full-time jobs. Women who have a relatively higher presence in public administration jobs, mainly in health and education (as is the case in Spain) act as an automatic stabiliser against gender discrimination; since employment in the public sector is generally more stable than in the private sector. In other words, employment phenomena are less pro-cyclical in the public sector, compared to the private sector. Stylised facts support this hypothesis: during the GR, the relative representation of women in public employment increased from 53% in 2008 at 56% in 2015. This 3 pp increase appears together with an increase in the participation rate of females equal to 2 pp (from 52 to 54%), giving evidence of the concentration on public sector of female workers.

This same hypothesis may also explain the evolution of the GUG during the years of recovery; when, as pointed above, a slight increase is registered. We can continue with the case study provided by the Spanish economy. From 2014, it is observed a quick recovery of the levels of full-time employment in the private sector, mainly concentrated among males. Between the last quarter of the year 2013, and the corresponding quarter of 2017, a total amount of 1173 jobs existed. From these, men covered 58%. The increase in the GUG may also be partially explained by the reduction in the rates of participation observed during the first years of the recovery period. In 2008, this rate was equal to 69% and, during the last quarter of the year 2017, it diminished to 64.5%.

The evolution of the 'gender pay gap' allows concluding the existence of a marked difference between the Mediterranean countries (Spain and

Italy) and our continental European examples (France and Germany); being the UK a particular case described showing the highest reduction in the GPG during the GR (see Coulter 2016). As shown along the chapter, Italy registers the lowest value for the GPG both, before and after the GR. However, for this country, a slight increase is detected; that is to say, gender differences in earnings increase during the GR. In fact, the value of the GPG is equal to 4.3% in 2006 and reaches 6.1% value in 2014. In contrast, in the case of Spain the value of the gap diminishes from 17.9% in 2006 to 14.9% in 2014; that is to say, 3 pp.

The value of the gap does not change for France and Germany, where these are around 15.5 and 22% respectively. As explained above, international gender differences in labour market outcomes are mainly caused by differences in labour market structures (labour supply and demand forces as well as different institutional frameworks). However, structural changes with this regard registered during the GR are not sufficiently significant in number, or in magnitude, to explain the changes (Mediterranean countries) or lack of changes (continental countries) registered. Moreover, it would be necessary to wait for a longer period of time in order to observe and judge their actual effect on labour market gender differences.

We are of the opinion that the trends observed during the GR are the clear response to some trends in the distribution of female and male employment. We refer to the following factors. First, these four countries show different distributions between sectors and occupations. More concretely, occupational segregation may differ among females before and during the GR. During the years of the GR, the bulk of employment destroyed was concentrated among non-qualified workers. A priori, this destruction may have similarly affected both, males and females. However, sectoral and occupational segregation tends to have a protective effect on females. Moreover, these female workers show a higher average qualification and, consequently, changes in gender differences may reflect not as much the proximity of wages between females and males but the gender differences in productivity caused by a different composition of the labour market. In Olivetti and Petrongolo (2014), data for different countries are provided. It is interesting to notice that the lowest gaps among highly qualified workers is found for

the cases of Italy and Spain; which are obviously lower than the gaps found for the cases of France and Germany. Among the lowest qualified workers, France and Germany present a lower gap than that found for Spain although higher than the gap presented by Italy.

According to these findings, the different behaviour between Mediterranean and continental EU countries may respond to a change in the composition of female employment during the crisis or to a prevalence of a patrol well settled before the crisis (as would be the case of Italy). The lower presence of female employers in jobs of lower qualifications and, consequently, of lower remunerations, modifies the relative weight of qualified women on the overall wage for females. Moreover, if we also take into account that the GPG is higher among the less qualified workers, then the expected result is the reduction in the GPG as is observed for the case of Spain or a slight increase as observed in Italy. Our hypothesis could also explain the findings for France and Germany were the happenings developed similarly to those explained for the cases of Italy and Spain. However, it would be also necessary to assume for these two cases a more mixed distribution of females and males among the jobs of higher and lower qualification (Kunze 2017b).

Data in our analysis does not allow confirming that the years of the GR have strongly negatively affected gender equality. In fact, the historically narrowing of the gender gaps seems to have continued during the years of the crisis. Similarly, we cannot conclude that the evolution of the gender gaps have been singularly positive for the objective of gender equality, even though some indicators point to this direction. We have explained some of the hypothesis that could explain the paradoxes behind the unexpected evolutions; these, being sectoral and segregational occupations the major factors that allow supporting these hypotheses.

6 Concluding Remarks

We can conclude that gender disparities remain for the vast majority of the countries and years analysed. This fact gives evidence of the long path ahead for the challenge of gender equality (in the labour

market, as here studied) to be reached. Moreover, the existence of theories and factors supporting the differential behaviour of the outcomes of females and males should not serve as an excuse to rest importance to the existing and illegal gender discrimination that the literature has shown. As pointed by Blau and Kahn (2017) policies and laws on gender equality in employment and measures to address the combination of familiar responsibilities and work as well as women's skills, can affect the degree of discrimination to reach gender equality. Moreover, fiscal policies affecting labour supply of females, increasing family benefits, subsidising child care and giving incentives for firms to hire females are paramount to reach gender equality (IMF 2017). Additionally, the "long-run impact of these policies on gender and labour market, as well as the division of labour within the family" (Blau and Kahn 2017, p. 850) are topics that still need further research.

References

Addabbo, T., Rodróguez-Modroño, P., & Gálvez, L. (2015). Gender Differences in Labor Force Participation Rates in Spain and Italy Under the Great Recession. *Revista de Economía Mundial, 41,* 21–42.

Agénor, P. R., & Canuto, O. (2015). Gender Equality and Economic Growth in Brazil: A Long-Run Analysis. *Journal of Macroeconomics, 43,* 155–172.

Anghel, B., De la Rica, S., & Dolado, J. (2011). *The Effect of Public Sector Employment on Women's Labour Market Outcomes* (IZA Discussion Paper No. 5825).

Babcock, L., & Lashever, S. (2003). *Women Don't Ask: Negotiation and the Gender Divide*. Princeton and Oxford: Princeton University Press.

Bausola, M., & Mussida, C. (2017). Regional and Gender Differentials in the Persistence of Unemployment in Europe. *International Review of Applied Economics, 31*(2), 173–190.

Becker, G. S. (1971). *The Economics of Discrimination* (2nd ed.). Chicago and London: University of Chicago Press.

Bentolila, S., Dolado, J. J., Cahuc, P., & Le Barbanchon, T. (2012). Two-Tier Labor Markets in the Great Recession: France vs. Spain. *The Economic Journal, 122,* 155–187.

Bertola, G., Blau, F. D., & Kahn, L. M. (2007). Labour Market Institutions and Demographic Employment Patterns. *Journal of Population Economics, 20*(4), 833–867.

Bertrand, M. (2011). New Perspectives on Gender. In O. Ashenfeltere & D. Card (Eds.), *Handbook of Labor Economics 4B* (pp. 1543–1590). Amsterdam and Boston: Elsevier.

Blau, F. D., & Kahn, L. M. (1992). The Gender Earnings Gap: Learning from International Comparisons. *American Economic Review, 82,* 533–538.

Blau, F. D., & Kahn, L. M. (1995). The Gender Earnings Gap: Some International Evidence. In R. Freeman & L. Katz (Eds.), *Differences and Changes in Wage Structures* (pp. 105–143). Chicago: University of Chicago Press.

Blau, F. D., & Kahn, L. M. (1996a). International Differences in Male Wage Inequality: Institutions versus Market Forces. *Journal of Political Economy, 104,* 791–837.

Blau, F. D., & Kahn, L. M. (1996b). Wage Structure and Gender Earnings Differentials: An International Comparison. *Economica, 63,* S29–62.

Blau, F. D., & Kahn, L. M. (2001). Understanding International Differences in the 'Gender Pay Gap'. *NBER* (Working Paper No. 8200).

Blau, F. D., & Kahn, L. M. (2007). Changes in the Labor Supply Bahaviour of Married Women: 1980–2000. *Journal of Labour Economics, 25*(3), 393–438.

Blau, F. D., & Kahn, L. M. (2013). Female Labor Supply: Why is the US falling Behind? *NBER* (Working Paper No. 18702).

Blau, F. D., & Kahn, L. M. (2017). The Gender Wage Gap: Extent, Trends, and Explanations. *Journal of Economic Literature, 55*(3), 789–865.

Blau, F. D., Ferber, M. A., & Winkler, A. E. (2014). *Economics of Women, Men and Work* (7th ed.). London: Pearson.

Boll, C., Rossen, A., & Wolf, A. (2016). *The EU Gender Earnings Gap: Job Segregation and Working Time as Driving Factors* (Hamburg Institute of International Economics (HWWI) RP176).

Boll, C., Leppin, J., Rossen, A., & Wolf, A. (2016). *Magnitude and Impact Factors of the 'Gender Pay Gap' in EU Countries*. European Commission. Luxembourg: Publication Office of the European Union.

Brunet, C., & Jeffers, E. (2017). Labor Market Gender Gaps and the GR: Evidence from European Union. Work in Progress.

Coulter, S. (2016). The UK Labour Market and the 'Great Recession'. In M. Mayant, S. Theodorophoulou, & A. Piasna (Eds.), *Unemployment*

International Devaluation and Labour Market Deregulation in Europe (pp. 197–227). Brussels, Belgium: European Trade Institute.

Croson, R., & Gneezy, U. (2009). Gender Differences in Preferences. *Journal of Economic Literature, 47*(2), 448–474.

De la Rica, S., & Rebollo-Sanz, Y. (2015). *Gender Differentials in Unemployment Ins and Outs during the Great Recession in Spain* (IZA Discussion Paper No. 9135).

Dreger, C., López-Bazo, E., Ramos, R., Royuela, V., & Suriñach, J. (2014). Wage and Income Inequality in the European Union. *Directorate General for Internal Policies*. Policy Department A: Economic and Scientific Policy. European Parliament.

EC. (2006). Communication from the Commission to the Council, the EP, the EESC and the CoR: A Roadmap for Equality Between Women and Men 2006–2010. *COM 92*.

EC. (2010). Strategy for Equality Between Women and Men 2010–2015. *COM 491*.

EC. (2015). The Strategic Engagement for Gender Equality 2016–2019. *SWD 278*.

EC. (2017). Report on Equality Between Women and Men in the EU. European Commission, Belgium.

EC. (2018). Tackling Discrimination at Work. *European Commission. Employment, Social Affairs and Inclusion*. Available at: http://ec.europa.eu/social/main.jsp?catId=158&langId=en. Accessed 5 Mar 2018.

Edin, P., & Richardson, K. (2002). Swimming with the Tide: Solidary Wage Policy and the Gender Earnings Gap. *The Scandinavian Journal of Economics, 104*(1), 49–67.

EIGE. (2017). *Economic Benefits of Gender Equality in the European Union*. European Institute for Gender Equality. Briefing Paper.

EIGE. (2018). *What is Gender Mainstreaming*. European Institute for Gender Equality. Available at: http://eige.europa.eu/gender-mainstreaming/what-is-gender-mainstreaming. Accessed 27 Jan 2018.

Elborgh-Woytek, K., Newiak, M., Kochhar, K., Fabrizio, S., Kpodar, K., Wingender, P., et al. (2013). *Women, Work and the Economy: Gains from Gender Equality*. IMF. SDN 13/10.

Garibaldi, P., & Taddei, F. (2013). *Italy: A Dual Labour Market in Transition. Country Case Study on Labour Market Segmentation* (Working Paper No. 144). *Geneva*: ILO.

Goldin, C., Lawrence, F. K., & Kuziemko, I. (2006). The Homecoming of American College Women: The Reversal of the College Gender Gap. *Journal of Economic Perspectives, 20*(4), 133–156.

Heckman, J. J. (1979). Sample Selection Bias as a Specification Error. *Econometrica, 47*(1), 153–161.

ILO. (2018). *Definition of Gender Mainstreaming*. International Labour Organization (ILO). Available at: http://www.ilo.org/public/english/bureau/gender/newsite2002/about/defin.htm. Accessed 27 Jan 2018.

IMF. (2017). *Gender Budgeting in G7 Countries*. International Monetary Fund.

Jaba, E., Pârtachi, I., Chistruga, B., & Balan, C. B. (2015). Gender Employment Gap in EU Before and After the Crisis. *Procedia Economics and Finance, 20,* 326–333.

Juhn, C., & Murphy, K. M. (1997). Wage Inequality and Family Labour Supply. *Journal of Labour Economics*, *15*(I), 72–97.

Juhn, C., Murphy, K., & Pierce, B. (1991). Accounting for the Slowdown in Black-White Wage Convergence. In M. Kosters (Ed.), *Workers and Their Wages* (pp. 107–143). Washington, DC: AEI Press.

Kidd, M. P., & Shannon, M. (1996). The Gender Wage Gap: A Comparison of Australia and Canada. *Industrial and Labour Relations Review, 49,* 729–746.

Kunze, A. (2017a). *The Gender Wage Gap in Developed Countries*. CESifo (Working Paper No. 6529). Munich: Center for Economic Studies and Ifo Institute.

Kunze, A. (2017b). *The Gender Wage Gap in Developed Countries* (IZA Discussion Paper No. 10826).

Mueller, G., & Plug, E. (2006). Estimating the Effect of Personality on Male and Female Earnings. *ILR Review, 60*(1), 3–22.

Ngai, L. R., & Petrongolo, B. (2017). Gender Gaps and the Rise of the Service Economy. *American Economic Journal: Macroeconomics, 9*(4), 1–44.

OECD. (2017). *Report on the Implementation of the OECD Gender Recommendations. Some Progress on Gender Equality but Much Left to Do*. Paris: OECD.

Olivetti, C., & Petrongolo, B. (2008). Unequal Pay or Unequal Employment? A Cross-Country Analysis of Gender Gaps. *Journal of Labor Economics, 26*(4), 621–654.

Olivetti, C., & Petrongolo, B. (2014). Gender Gaps Across Countries and Skills: Demand, Supply, and the Industry Structure. *Review of Economic Dynamics, 17,* 842–859.

Olivetti, C., & Petrongolo, B. (2016). The Evolution of Gender Gaps in Industrialized Countries. *Annual Review of Economics, 8,* 405–434.

Olivetti, C., & Petrongolo, B. (2017). *The Economic Consequences of Family Policies: Lessons from a Century of Legislation in High-Income Countries*.

NBER (Working Paper No. 23051). Cambridge: National Bureau of Economic Research.

Piazzalunga, D., & Di Tomasso, M. L. (2015). The Increase of the Gender Wage Gap in Italy During the 2008–2012 Economic Crisis. *Society for the Study of Economic Inequality ECINEQ* (Working Paper 2015/381).

Rinne, U., & Zimmermann, K. F. (2012). Another Economic Miracle? The German Labor Market and the Great Recession. *IZA Journal of Labor Policy, 1*(1), 1–3.

Thévenon, O. (2013). *Drivers of Female Labour Force Participation in the OECD*. OECD Social, Employment and Migration (Working Papers No. 145). Paris: OECD Publishing.

UN. (2018). United Nations. Human Rights. Office of the High Commissioner. Available at: http://www.ohchr.org/EN/Issues/Pages/WhatareHumanRights.aspx. Accessed 25 Jan 2018.